

## ECONOMIC DRIVERS



## EMPLOYMENT GROWTH RANK

2016-2018  
**31**  
4th quintile

2016-2021  
**34**  
4th quintile

Best=1, Worst=54

## BUSINESS COSTS

INDEX  
**95%**

RANK  
**39**

U.S.=100% Highest=1, Lowest=51

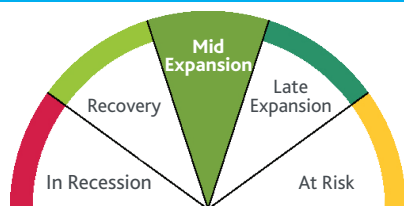
## VITALITY

RELATIVE  
**87%**

RANK  
**37**

U.S.=100% Best=1, Worst=51

## BUSINESS CYCLE STATUS



## STRENGTHS &amp; WEAKNESSES

## STRENGTHS

- » Affordable housing compared with the rest of the Northeast.
- » Strong roster of leading educational institutions and hospitals.
- » Below-average employment volatility.

## WEAKNESSES

- » Weak and worsening migration trends.
- » Aging infrastructure.
- » Unfavorable tax structure in City of Philadelphia.

## FORECAST RISKS

SHORT TERM



LONG TERM


RISK EXPOSURE  
2017-2022

**43**

5th quintile

Highest=1  
Lowest=51

## UPSIDE

- » Strong downtown investment lifts Philadelphia's long-term growth prospects.
- » Logistics provide bigger boost as more online distribution centers pop up.

## DOWNSIDE

- » Changing landscape of healthcare requires more cost-cutting by hospitals.
- » Budget shortfall leads to poor policy mix.
- » Weak revenue and sizable pension liabilities limit state and local governments.

## MOODY'S RATING

**Aa3**

AS OF AUG 05, 2016

## ANALYSIS

**Recent Performance.** Pennsylvania had a good year in 2017, and the economy is in its best shape since before the Great Recession. Job growth has been steady at around 1% all year, which is below average for the U.S. but healthy for a state with demographic and fiscal headwinds. Private services are leading the way, and while government remains a weak spot, goods-producing industries are no longer a drag.

Despite the progress, however, the recovery remains unfinished. Hourly wages are increasing at only a mild pace, and new data indicate that personal income grew a disappointing 2% year over year in the third quarter. Steady job gains alongside a failure of wages and incomes to accelerate suggest that the labor market still has room to improve.

**Housing.** The housing market will be the last piece of the recovery to fall into place for PA, making 2018 a banner year for residential construction. Though the housing market has gradually and steadily improved, a significant amount of pent-up housing demand remains. Quality-adjusted single-family house prices are growing at their fastest pace since the housing bubble burst, but they still lag the U.S. rate by more than 2 percentage points. Similarly, single-family permitting is trending up but still falls short of prerecession levels.

Some of the weak demand for single-family homes has been offset by multifamily, but total household formation and permitting remain low. The labor market will finally tighten enough to deliver stronger wage and income growth over the next two years, releasing pent-up single-family housing demand. Construction employs just over 4% of the state's workers but is on track to create about one in six net new jobs through 2019.

**Natural resources and mining.** The energy bust has run its course and will no longer be a

burden on PA. From 2014 to 2016, natural resources and mining losses cost the state 16,000 jobs, weighing heavily on metro areas with large energy sectors, including Pittsburgh and Williamsport. However, natural gas prices have moved up from historic lows, arresting the decline in energy payrolls over the last year. Large pipeline projects in development should further support prices over the next few years by allowing natural gas to be shipped to higher-demand states. Productivity gains will keep a lid on labor demand, but the industry will add some jobs in the near term.

**Demographics.** Weak demographics are one of the harshest headwinds against PA. Low population growth has been a problem for the state over the last few years. Newly released Census data for 2017 reveal that the state rebounded from population losses during the prior year to add residents at the fastest clip in five years. Still, population growth is weak relative to the 1990s and 2000s, and an annual growth rate of just 0.14% puts PA behind most of its neighbors and the U.S.

One factor is that the state's natural rate of population growth, births minus deaths, is one of the lowest in the country. Another issue is that PA is losing population to other states. Despite a better year demographically in 2017, these near-term trends suggest the population will decline. In addition, the Trump administration's critical stance toward immigration will contribute to a slowdown in net international migration to the state over the next few years.

**The Pennsylvania economy will keep pace with the Northeast in the near term as the housing market improves and the state's labor market moves to full employment. In the long run, slow population growth and fiscal problems will weigh on job growth and ensure that the state lags the nation.**

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January 2018

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2011	2012	2013	2014	2015	2016	INDICATORS	2017	2018	2019	2020	2021	2022
597.3	607.2	617.1	629.5	644.2	647.7	Gross state product (C09\$ bil)	660.8	680.4	691.7	694.2	711.0	726.5
5,686	5,726	5,740	5,788	5,834	5,887	Total employment (th)	5,951	6,018	6,056	6,057	6,085	6,132
1.2	0.7	0.2	0.8	0.8	0.9	% change	1.1	1.1	0.6	0.0	0.5	0.8
7.9	7.7	7.1	5.8	5.3	5.5	Unemployment rate (%)	4.9	4.3	4.2	4.7	4.9	4.9
5.1	4.4	0.6	4.1	3.8	1.8	Personal income growth (%)	2.8	5.1	5.1	4.0	4.1	4.1
12,743	12,768	12,778	12,790	12,791	12,787	Population (th)	12,806	12,811	12,798	12,778	12,757	12,744
17.8	9.9	0.1	-2.5	-7.5	-12.5	Net migration (th)	11.6	-1.7	-18.8	-26.5	-26.3	-17.2
11,790	13,432	15,505	16,371	15,420	16,457	Single-family permits (#)	18,482	24,249	29,720	30,656	35,312	36,519
3,177	5,364	6,145	8,688	7,434	6,846	Multifamily permits (#)	6,530	5,975	5,862	5,132	5,417	5,882
365	362	366	372	383	395	FHFA house price (1980Q1=100)	410	423	426	435	449	465
8.3	8.0	8.1	7.4	6.5	6.1	Mortgage delinquency rate (%)	6.1	5.5	5.4	5.4	5.6	5.8
565.2	599.7	622.7	651.0	675.7	678.4	New vehicle registrations (th)	668.9	708.3	710.0	667.7	685.6	745.0
32,364	28,253	26,171	23,102	21,584	20,871	Personal bankruptcies (#)	20,789	19,532	20,341	22,809	27,564	33,839

## ECONOMIC HEALTH CHECK

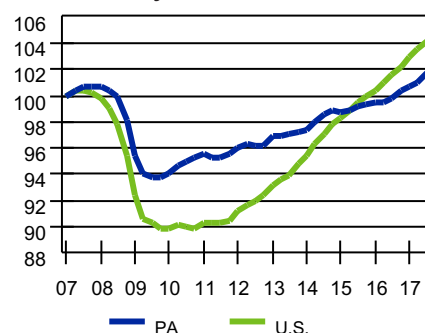
3-MO MA

	Jul 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17
Employment, change, ths	1.2	6.8	13.2	10.6	9.5	5.4
Unemployment rate, %	5.0	5.0	4.9	4.8	4.7	4.7
Initial unemployment claims, ths	68.9	68.6	65.8	65.4	66.8	66.2
Labor force participation rate, %	63.1	62.9	62.7	62.5	62.4	62.3
Merchandise exports, \$ bil	37.1	37.8	39.1	39.4	39.5	ND
Average weekly hours, #	33.8	33.8	33.8	33.8	33.9	33.8
Industrial production, 2012=100	104.0	103.8	103.7	104.2	104.9	105.8
Residential permits, #	25,117	22,029	22,295	22,162	23,497	24,044
Better than prior 3-mo MA		Unchanged from prior 3-mo MA		Worse than prior 3-mo MA		

Sources: BLS, Census Bureau, Dept. of Labor, Moody's Analytics

## BUSINESS CYCLE INDEX

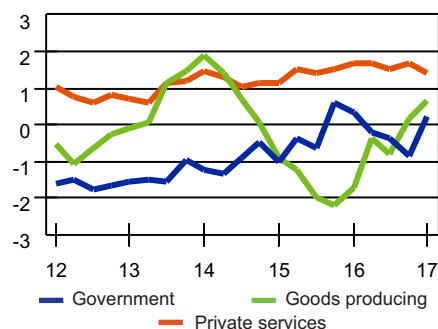
JAN 2007=100



Source: Moody's Analytics

## CURRENT EMPLOYMENT TRENDS

% CHANGE YR AGO



Sources: BLS, Moody's Analytics

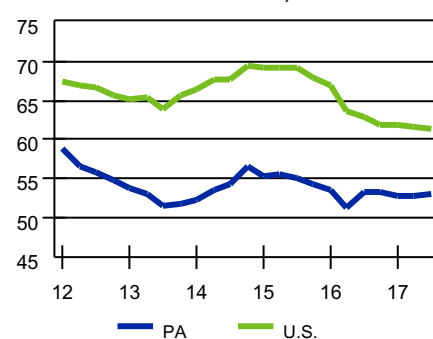
% CHANGE YR AGO, 3-MO MA

	Dec 16	Jun 17	Dec 17
Total	1.0	1.0	1.2
Mining	-21.5	-5.2	0.4
Construction	0.2	2.2	4.4
Manufacturing	-1.4	-1.9	-0.5
Trade	-0.4	-0.9	-0.2
Trans/Utilities	3.1	3.3	1.3
Information	0.6	-0.8	-3.2
Financial Activities	0.1	0.3	0.6
Prof & Business Svcs.	1.1	2.1	3.0
Edu & Health Svcs.	3.4	2.5	1.9
Leisure & Hospitality	2.8	2.7	3.4
Other Services	1.2	1.2	-0.1
Government	0.4	-0.4	-0.7

Sources: BLS, Moody's Analytics

## DIFFUSION INDEX

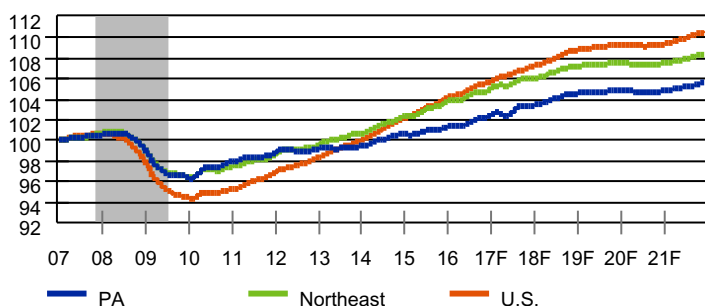
3-DIGIT NAICS LEVEL, 6-MO MA



Sources: BLS, Moody's Analytics

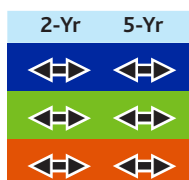
## RELATIVE EMPLOYMENT PERFORMANCE

JAN 2007=100



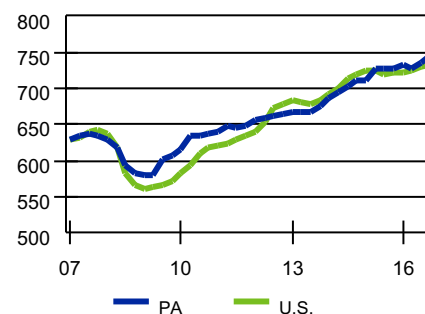
Sources: BLS, Moody's Analytics

FORECAST  
VS. 6 MO PRIOR



## STATE TAX REVENUE

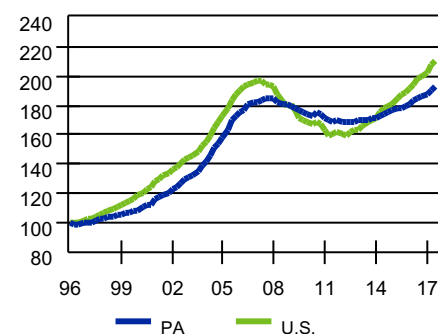
\$ PER CAPITA



Sources: Census Bureau, Moody's Analytics

## HOUSE PRICE

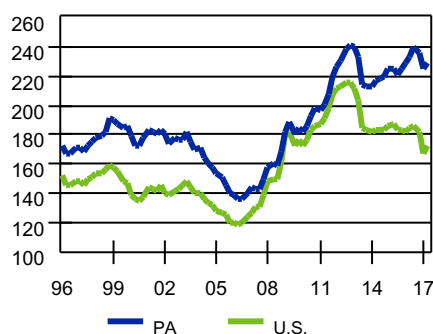
1996=100, NSA



Sources: FHFA, Moody's Analytics

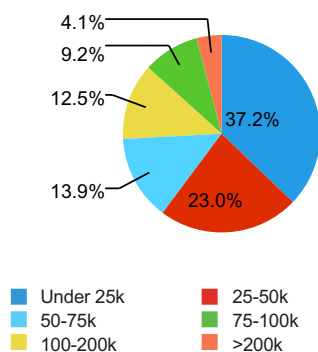
## HOUSING AFFORDABILITY

GREATER THAN 100=MORE AFFORDABLE

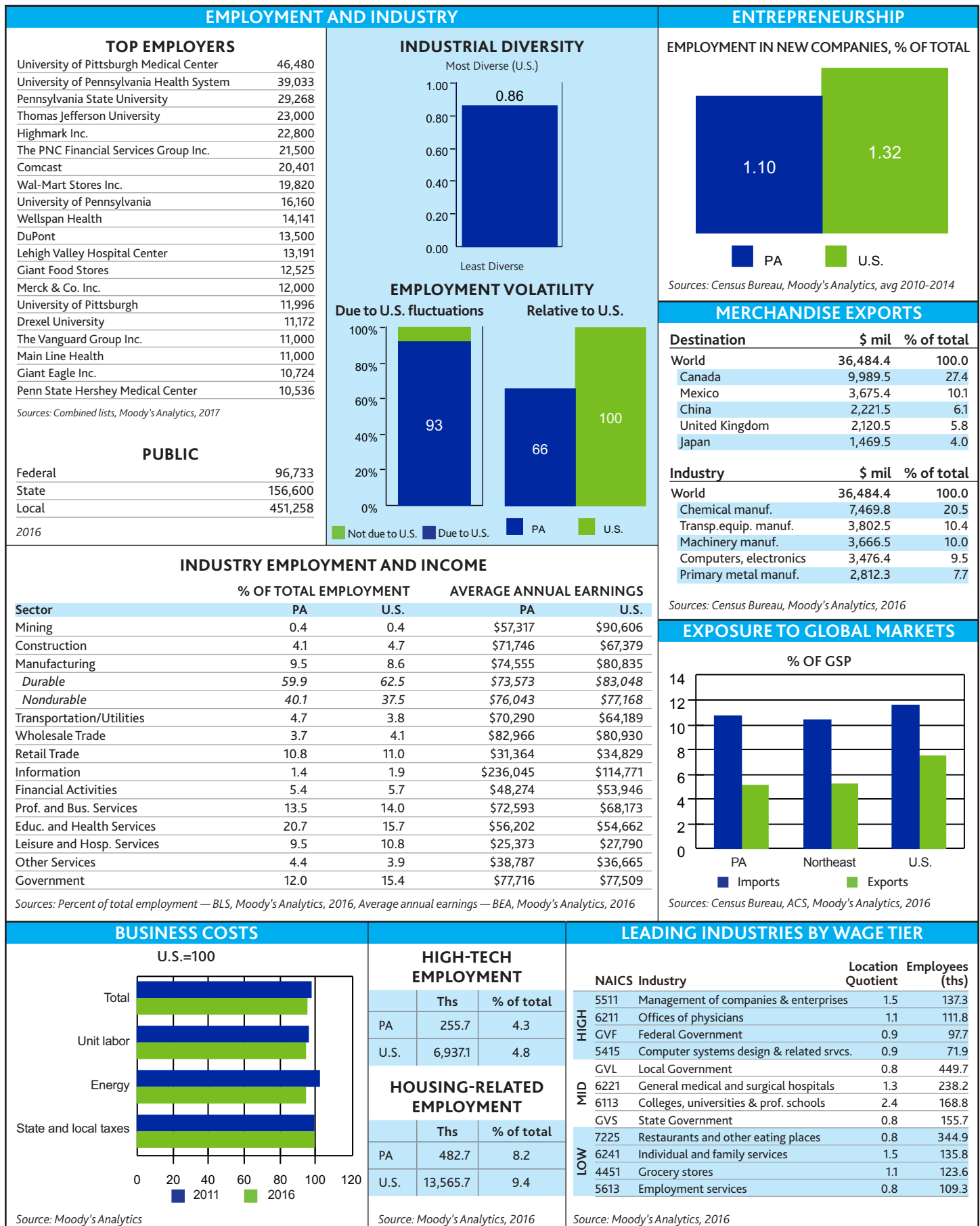


Sources: NAR, Moody's Analytics

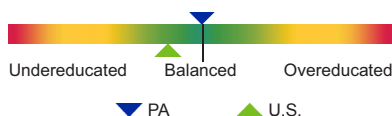
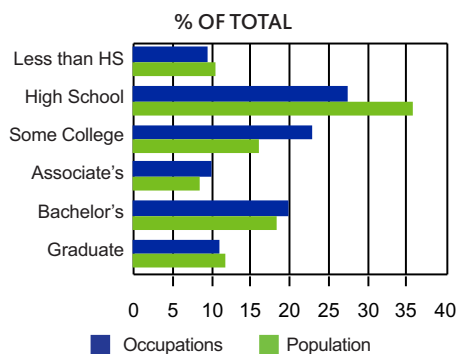
## INCOME TAX DISTRIBUTION



Sources: IRS, Moody's Analytics, 2015



## SKILLS MISMATCH

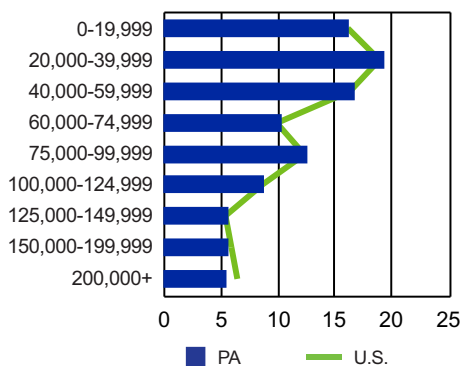


## ECONOMIC DISENFRANCHISEMENT

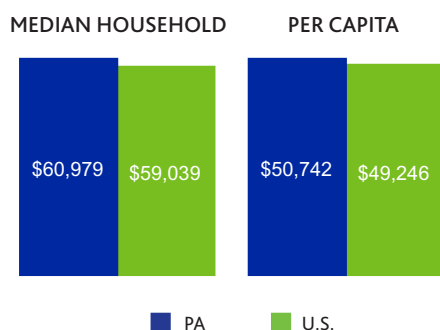
Index	2016	Rank*
Gini coefficient	0.47	26
Palma ratio	3.1	28
Poverty rate	12.9%	30

\*Most unequal=1, Most equal=54

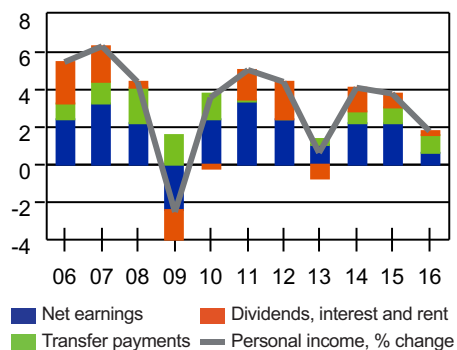
## HOUSEHOLDS BY INCOME, %



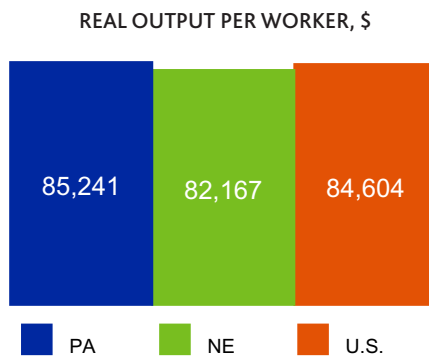
## INCOME



## PERSONAL INCOME GROWTH



## PRODUCTIVITY



## MIGRATION FLOWS

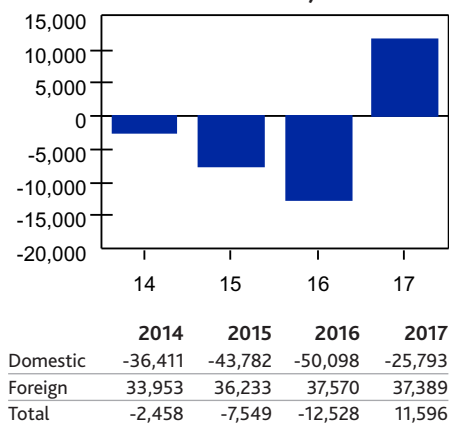
### INTO PENNSYLVANIA

State	NUMBER OF MIGRANTS
New York	27,355
New Jersey	26,690
Maryland	13,563
Florida	12,628
Virginia	8,514
Texas	8,153
California	7,617
Ohio	7,369
North Carolina	6,670
Delaware	5,653
<b>Total in-migration</b>	<b>177,230</b>

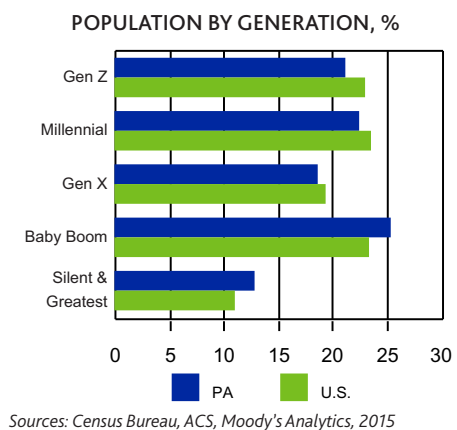
### FROM PENNSYLVANIA

State	NUMBER OF MIGRANTS
Florida	27,981
New Jersey	20,805
New York	16,908
Maryland	11,595
North Carolina	11,457
Texas	10,913
California	10,676
Ohio	10,188
Virginia	9,923
Delaware	7,696
<b>Total out-migration</b>	<b>210,490</b>
<b>Net migration</b>	<b>-33,260</b>

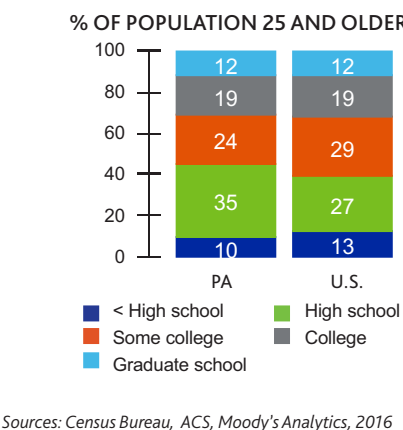
## NET MIGRATION, #



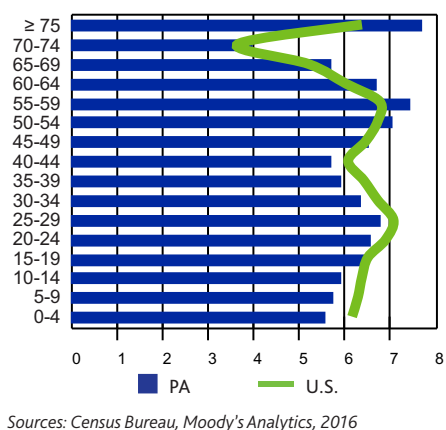
## GENERATIONAL BREAKDOWN



## EDUCATIONAL ATTAINMENT



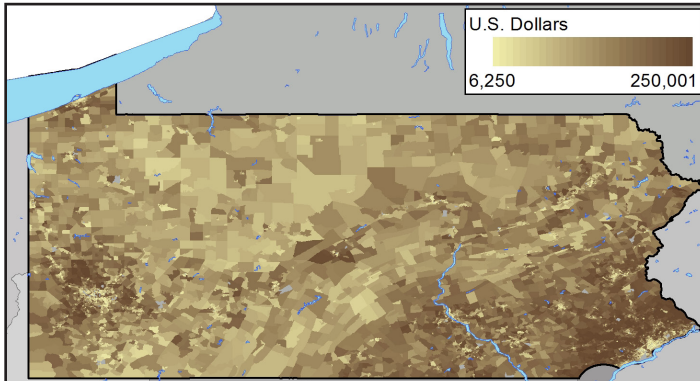
## POPULATION BY AGE, %



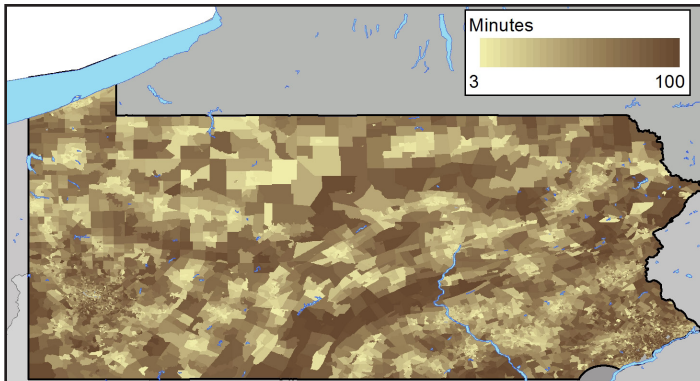
## POPULATION DENSITY



## MEDIAN HOUSEHOLD INCOME



## MEDIAN COMMUTE TIME



## POPULATION & HOUSING CHARACTERISTICS

	Units	Value	Rank*
Total land area	sq mi	44,742.7	32
Population density	ratio population to land area	286.2	10
Total population	ths	12,805.5	5
White	% of population	77.0	19
Hispanic	% of population	7.0	30
Black	% of population	10.8	21
Asian	% of population	3.4	20
U.S. citizen at birth	% of population	91.4	26
Naturalized U.S. citizen	% of population	3.6	24
Not a U.S. citizen	% of population	3.3	30
Median age		40.6	8
Total housing units	ths	5,612.0	5
Owner occupied	% of total	60.3	5
Renter occupied	% of total	27.7	35
Vacant	% of total	12.0	31
1-unit, detached	% of total	57.0	43
1-unit, attached	% of total	18.6	3
Multifamily	% of total	20.5	27
Median year built		1963	

\* Out of 51 states

Sources: Census Bureau, Moody's Analytics, 2016 except land area 2010

Sources: ACS, Moody's Analytics



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